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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR            | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|---------------------------------|---------------------|------------------|
| 10/534,316      | 05/09/2005  | Stefan Margheurite Jean Willems | BE 020033           | 4911             |

24737 7590 08/09/2006

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| EXAMINER |
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LEE, PING

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| ART UNIT | PAPER NUMBER |
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2615

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/534,316

Applicant(s)

WILLEMS, STEFAN  
MARGHEURITE JEAN

Examiner

Ping Lee

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2 and 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Aarts et al (US006111960A).

Regarding claim 1, 5 and 6, Aarts et al (hereafter Aarts) disclose a method of generating an output audio signal (at 12) by adding (by 26) output components (from 24) in a predetermined first frequency range (set by 24) to an input signal (from 10), the output components being generated by performing a predetermined calculation, characterized in that a first output energy measure, over a predetermined first time interval, of the output components generated is set, based upon a first input energy measure (col. 5, lines 28-32) calculated over a predetermined second time interval (although not clearly defined, the energy is inherently calculated based on a predetermined time interval) of second input components (after 20), in a predetermined third frequency range (as set by 20) of the input audio signal.

Regarding claim 2, Aarts shows that the third frequency range (set by 20) is closest to the first frequency range (set by 24) since the first frequency range is not in high frequency range.

Regarding claim 4, Aarts shows the non linear function (by harmonic generator).

3. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Nilsson et al (WO 02/086867 A1).

Regarding claim 1, 2, 5 and 6, Nilsson et al (hereafter Nilsson) disclose a method of generating an output audio signal ( $a_{WB}$ ) by adding (by 108) output components (from 107) in a predetermined first frequency range (high frequency range) to an input signal (from 102), the output components being generated by performing a predetermined calculation, characterized in that a first output energy measure, over a predetermined first time interval, of the output components generated is set, based upon a first input energy measure (for  $a_{NB}$ ) calculated over a predetermined second time interval (as shown in Fig. 6) of second input components (for  $a_{NB}$ ), in a predetermined third frequency range (as shown in Fig. 3) of the input audio signal.

Regarding claims 7 and 8, Nilsson shows the computer program (p.1).

4. Claims 1, 3, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Gerrits (US 20020097807A1).

Regarding claim 1, 5 and 6, Gerrits discloses a method of generating an output audio signal (32) by adding (by 30) output components (from 54) in a predetermined first frequency range (high frequency range) to an input signal (from 16), the output components being generated by performing a predetermined calculation, characterized in that a first output energy measure, over a predetermined first time interval, of the output components generated is set, based upon a first input energy measure (p. 4, para. 26) calculated over a predetermined second time interval (a frame) of second

input components (from 26), in a predetermined third frequency range (narrow band) of the input audio signal.

Regarding claim 3, the claimed second energy measure reads on the energy of the previous frame as discussed in para. 26.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aarts.

Regarding claims 7 and 8, Aarts fails to show that the process is performed according to a computer program. However, based on Aarts' detail description, one skilled in the art would be able to implement the process by a computer program. Furthermore, Aarts teaches that the audio signal could be from CD or for PC, which includes digital signal processor. By programming the digital signal processor to include the harmonic signal generator as taught in Aarts would provide the benefit to the user to hear a more natural sound with extended frequency band.

7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerrits.

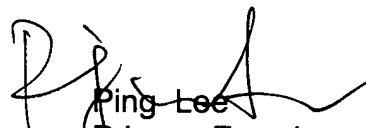
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Regarding claims 7 and 8, Gerrits fails to show that the process is performed according to a computer program. However, based on Gerrits' detail description, one skilled in the art would be able to implement the process by a computer program. Furthermore, Gerrits teaches that the audio signal could be from mobile phone or voice over IP, which includes digital signal processor. By programming the digital signal processor to include the bandwidth extension as taught in Gerrits would provide the benefit to the user to hear a more natural sound with extended frequency band.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 571-272-7522. The examiner can normally be reached on Monday, Wednesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Ping Lee  
Primary Examiner  
Art Unit 2615

pwl